Andrewsii is found occasionally with its parents. *Spiranthes lucida*, a southern species, extends northward throughout Vermont and as far east as central Maine. It is not found in Rhode Island nor west of the Connecticut River in Massachusetts.

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PENTHORUM: ITS CHROMOSOMES

J. T. Baldwin, Jr. and Bernice M. Speese

Penthorum L. is of widespread occurrence in North America and Asia and is variously interpreted to consist of one, two, or three species. The genus is found, as *P. sedoides* L., from New Brunswick to Texas, from Ontario and Minnesota to Florida. It grows in wet low places and exhibits the extreme vegetative variability often expressed by plants subjected to periodic inundations. Representatives of the genus in Asia are frequently referred to this same species.

The affinities of *Penthorum* are puzzling. The genus has sometimes been placed in the *Crassulaceae;* for example: De Candolle (1828) established Tribe *Crassulaceae Anomalae* for *Diamorpha* Nutt. and *Penthorum;* Torrey and Gray (1840) put these genera together in Tribe *Diamorpheae;* Schönland (1894) incorporated *Penthorum* between *Diamorpha* and *Triactina* Hook. f. & Th. But Berger (1930) omitted *Penthorum* from his monograph on the *Crassulaceae*, and Fernald (1950) broke with the practice in the previous editions of *Gray's Manual* by assigning this genus to the *Saxifragaceae* rather than to the *Crassulaceae.* This accords with the work of certain other investigators. Baillon (1872) referred *Penthorum* to a monotypic tribe, and Engler (1930) to a monotypic subfamily, of the *Saxifragaceae.* On the basis of morphological and anatomical data, van Tieghem (1899) erected the *Penthoraceae* as a family for the genus, and Rydberg (1932) and Small (1933) followed van Tieghem's treatment.

In the course of embryological studies of American and Asiatic plants of *Penthorum sedoides*, Rocén (1928) counted eight prophase chromosomes in embryo-sac and pollen-mother-cell divi-

sions. Mauritzon (1933) interpreted embryological observations to mean that the genus showed closer relationship to the *Saxifragaceae* than to the *Crassulaceae;* Skovsted (1934), relying on chromosome numbers then known for the two families, was of the opposite view. Baldwin (1940) reported *n*-numbers of 9 and 2*n*-numbers of 18 for *P. sedoides* from Virginia and for *Diamorpha cymosa* (Nutt.) Britt. from Alabama, Georgia, and North Carolina (and later found these numbers for *D. cymosa* near Rugby, Morgan Co., Tennessee). These and other chromosomal data suggested that *Penthorum* rightly belonged in the *Crassulaceae.*

Subsequent study has confirmed these observations on the chromosomes of American representatives of *Penthorum sedoides.* Prof. Chien P'ei, Institute of Botany, Academia Sinica, Shanghai, and Prof. Albert N. Steward, Department of Botany, University of Nanking, Nanking, each sent us seed identified by them as *Penthorum sedoides.* We found plants from seed of both those sources to have *n*-numbers of 8, 2*n*-numbers of 16. Analysis of material from China thus substantiates Rocén's report. That two different chromosome numbers are present is an indication that the American and Asiatic plants belong to different species. No suggestion is made here as to what family *Penthorum* should be relegated.

Geographic sources, chromosome numbers, and the collectors of American plants of *P. sedoides* investigated by us are listed:

	n	*2n*	
New York			
Tioga Co.: Flemingsville		18	R. T. Clausen
Indiana			
Wells Co.: Bluffton		18	C. C. Deam
Arkansas			
Washington Co.: Springdale		18	D. M. Moore
Virginia			
James City Co.: Five Forks	9		R. W. Menzel
Williamsburg	9	18	B. M. Speese
Clarke Co.: Boyce	9	18	J. T. Baldwin, Jr.
Shenandoah Co.: Fort Valley		18	J. T. Baldwin, Jr.
Strasburg		18	J. T. Baldwin, Jr.
Amelia Co.: Amelia Courthouse		18	J. B. Lewis.

As records of some of the plants for which chromosomes were investigated, the following specimens have been placed in the Herbarium of the U. S. National Arboretum, Beltsville, Mary-

land: *Baldwin 5351*, Shenandoah Co., Virginia; *Baldwin 14537*, James City Co., Virginia; and *Baldwin 14538*, plant from seed sent by Professor Steward from Nanking, China.

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RANGE EXTENSIONS OF MARSH AND AQUATIC PLANTS. 2.

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In the ten years since the author published "Range Extensions of Marsh and Aquatic Plants" (Rhodora 42: 20–22, January, 1940), biologists of the Fish and Wildlife Service, United States Department of the Interior (successor to Bureau of Biological Survey, Department of Agriculture) have made additional discoveries that seem worth recording. A specimen of each collection cited has been deposited in the United States National Herbarium and duplicates of some are in the Gray Herbarium. Identifications are by the writer, except as otherwise noted.